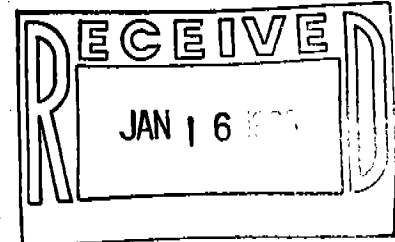




ENGINEERING CONSULTING SERVICES, LTD.
Geotechnical • Construction Materials • Environmental

January 9, 1998

Mr. John Nantz
Guilford County Division of Environmental Health
1100 East Wendover Avenue
Greensboro, NC 27405



**Subject: Underground Storage Tank Closure Report
Piedmont Triad Airport Authority/Cargo Building #1
Greensboro, North Carolina
ECS Project G-1860**

Dear Mr. Nantz:

On behalf of the Piedmont Triad Airport Authority, Engineering Consulting Services, Ltd. (ECS) is submitting this Underground Storage Tank Closure Report for the subject site. Included in this report is a description of the field activities, the results obtained, and our conclusions and recommendations.

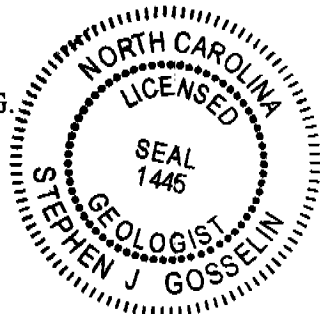
This closure report has been prepared in general accordance with the Underground Storage Tank Closure Report guidelines presented in the GW/UST-12 form dated October 1994. We appreciate your consideration and cooperation in the submission of this report.

Sincerely,

ENGINEERING CONSULTING SERVICES, LTD.

Sania V. Werner
Project Geologist

Stephen J. Gosselin, L.G.
Principal Geologist
Licensed, NC#1445



Attachments

5-C Dundas Circle, Greensboro, NC 27407 • (910) 856-7150 • Fax (910) 856-7160

Offices: Washington, DC; Baltimore, MD; Frederick, MD; Richmond, VA; Norfolk, VA; Fredericksburg, VA; Danville, VA;
Raleigh/Durham, NC; Wilmington, NC; Charlotte, NC; Greensboro, NC



ENGINEERING CONSULTING SERVICES, LTD.
Geotechnical • Construction Materials • Environmental

January 9, 1998

Mr. Bill Shaw
Piedmont Triad Airport Authority
P.O. Box 35445
Greensboro, North Carolina 27425

**Subject: Underground Storage Tank Closure Report
 Piedmont Triad Airport Authority/Cargo Building #1
 Greensboro, North Carolina
 ECS Project G-1860**

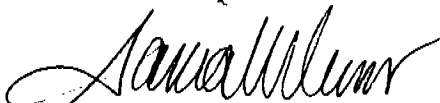
Dear Mr. Shaw:


As authorized by your acceptance of our Proposal 0862-P dated October 7, 1997, Engineering Consulting Services, Ltd. (ECS) has completed the underground storage tank (UST) closure report for one 5,000 gallon gasoline UST at the subject site. Included in this report is a description of the field activities, the results obtained, and our conclusions and recommendations.

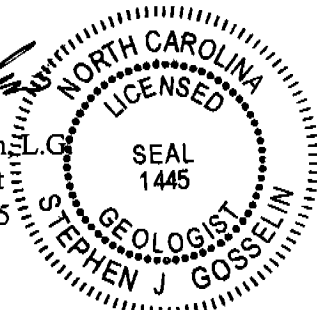
ECS appreciates the opportunity to provide our environmental consulting services to you on this project. If you have any questions concerning this report or this project, please contact us at 910-856-7150.

Sincerely,

ENGINEERING CONSULTING SERVICES, LTD.


Sania V. Werner
Project Geologist


Stephen J. Gosselin, L.G.
Principal Geologist
Licensed, NC#1445



Attachments

5-C Dundas Circle, Greensboro, NC 27407 • (910) 856-7150 • Fax (910) 856-7160

Offices: Washington, DC; Baltimore, MD; Frederick, MD; Richmond, VA; Norfolk, VA; Fredericksburg, VA; Danville, VA;
Raleigh/Durham, NC; Wilmington, NC; Charlotte, NC; Greensboro, NC

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III. SITE INVESTIGATION.....	4
IV. CONCLUSIONS AND RECOMMENDATIONS	5

FIGURES

Figure 1 - Site Location Map

Figure 2 - Site Plan

APPENDIX

Form GW/UST-3

Form GW/UST-2

Tank Disposal Manifest

Non-Hazardous Waste Manifest

Laboratory Data and Chain of Custody Records

*Piedmont Triad Airport Authority/Cargo Building #1
ECS Project G-1860
January 9, 1998*

I. GENERAL INFORMATION

The subject site is the Piedmont Triad International Airport property located on Highway 421 near the intersection of Airline Road in Greensboro, Guilford County, North Carolina (Figure 1). Information regarding site ownership, facility information, project contacts, underground storage tank (UST) information, and characteristics of the site is presented below:

A. Ownership of USTs

Piedmont Triad Airport Authority
6415 Airport Parkway, Suite 1
Greensboro, North Carolina 27409
(336) 665-5600

B. Facility Information

Piedmont Triad International Airport
Highway 421 near intersection of Airline Road
Greensboro, Guilford County, North Carolina 27409

C. Contacts

Primary Contact:	Mr. Bill Shaw Piedmont Triad Airport Authority 6415 Airport Parkway, Suite 1 Greensboro, North Carolina 27409 (336) 665-5600
Closure Contractor:	Environmental Management Solutions, Inc. 302-A Pomona Drive Greensboro, North Carolina 27407 (336) 632-8800
Primary Consultant:	Engineering Consulting Services, Ltd. 5-C Dundas Circle Greensboro, North Carolina 27407 (336) 856-7150

Piedmont Triad Airport Authority/Cargo Building #1
ECS Project G-1860
January 9, 1998

Laboratory: Paradigm Analytical Laboratories, Inc.
2627 Northchase Parkway SE
Wilmington, North Carolina 28405
North Carolina Certification Number 481

D. UST Information

Tank Number	Installation Date	Size	Tank Dimensions	Last Contents	Previous Contents
1	unknown	5,000 gallons	5 feet x 30 feet	Gasoline or Diesel	None

E. Site Characteristics

The subject site is located on Highway 421 near the intersection of Airline Road in Greensboro, North Carolina (Figure 1). One 5,000 gallon UST was previously used to store either gasoline or diesel for use on site. The areas surrounding the site contain the Piedmont Triad International Airport, commercial property, and undeveloped partially wooded areas. No water supply wells were observed on site and the area is served by the municipal water supply. The nearest surface water feature is an unnamed tributary of the East Fork Deep River located approximately 1,500 feet south of the site (Figure 1).

The site is located in the Piedmont Physiographic Province. The rock which underlies the site includes granitic rock of the Carolina Slate Belt unit. The virgin soils encountered in this area are the residual product of in-place chemical weathering of rock which was similar to the rock presently underlying the site. The soil weathering is more advanced near the surface, grading with depth to less weathered rock and finally bedrock. In this geologic setting, ground-water flow is generally a subdued replica of the surface topography and flows toward drainage features which have eroded deeply enough to intersect the ground-water level and act as a discharge point. The natural ground-water flow direction can be affected by pumping from high capacity wells and permanent or temporary dewatering systems. Based on the topographic map of the site vicinity, ground water at the site appears to flow to the south (Figure 1).

II. CLOSURE PROCEDURES

UST Removal Activities

Utilities at the site were located by ULOCO prior to UST removal activities. UST removal activities were performed by Environmental Management Solutions, Inc. of Greensboro, North Carolina.

On November 18, 1997, Shamrock Environmental Corporation removed approximately 1,585 gallons of liquid from the UST, and transported the liquid to their facility in Browns Summit, North Carolina. The non-hazardous waste manifest is included in the Appendix. On November 19, after completion of product removal, a backhoe was used to perform the UST excavation activities. The grass and soil covering the USTs were removed to expose the top of the UST. Prior to excavation, the level of explosive vapors in the UST was checked using a combustible gas indicator. The level was less than 10 percent of the lower explosive limit (LEL). The UST was excavated and removed from the ground and appeared to be in good condition. The UST was transported to Safeway Tank Disposal Inc. for disposal. A copy of the tank disposal manifest is included in the Appendix.

The top of the UST was approximately 6.5 feet below the ground surface. The final excavation was approximately 34 feet long, 8.5 feet wide and 11.5 feet deep. The soil in the UST excavation consisted of red to brown clayey silt to the base of the excavation. The excavated soils along with additional clean fill were placed back in the excavation on November 24 following receipt of the confirmation soil sample analysis.

No water was encountered in the UST excavation. Three soil samples were collected from beneath the middle and each end of the UST (SS-1 through SS-3, Figure 2). No product piping was encountered. Soil samples SS-1 through SS-3 were collected approximately 1 foot below the base of the UST excavation at a depth of 12.5 feet below grade. The soil samples were screened for volatile organic compounds (VOCs) in the field using a RAE Photoionization Detector (PID). No fuel pump dispensers were associated with the UST. Details of the field procedures are discussed in Section III.

The soil samples were shipped to Paradigm Analytical Laboratories (PAL) in Wilmington, North Carolina and analyzed for volatile and semi-volatile total petroleum hydrocarbon (TPH) concentrations using EPA Methods 5030/8015M and 3550/8015M. The laboratory data sheets are included in the Appendix.

III. SITE INVESTIGATION

Sample Collection Procedures

The soil samples collected from the floor of the excavation during UST removal activities were manually collected from the bucket of the backhoe using new, disposable latex gloves. The soil samples were placed into new 4-ounce capacity clean glass containers. After being filled, the sample containers were labeled with the project name and number, the time and date of sample collection, the analyses to be performed, and the absence or presence of preservative. The filled sample containers were placed into a cooler. Plastic bags containing ice were packed around the sample containers in the cooler to maintain the samples at approximately 4° Centigrade. The samples were shipped to Paradigm Analytical Laboratories, Inc. for 24-hour analysis. The Chain of Custody was maintained as documented in the Appendix.

PID Screening

A representative portion of each soil sample was placed into a plastic zip-lock bag and placed in a warm location. Approximately 10 minutes after the time of collection, the bag was opened slightly and the probe of a RAE PID was inserted. The meter of the PID was monitored and the reading recorded. No readings were detected on the PID meter.

Laboratory Analytical Results

Laboratory analysis detected no volatile or semi-volatile concentrations in the samples. The laboratory data sheets and Chain of Custody are included in the Appendix.

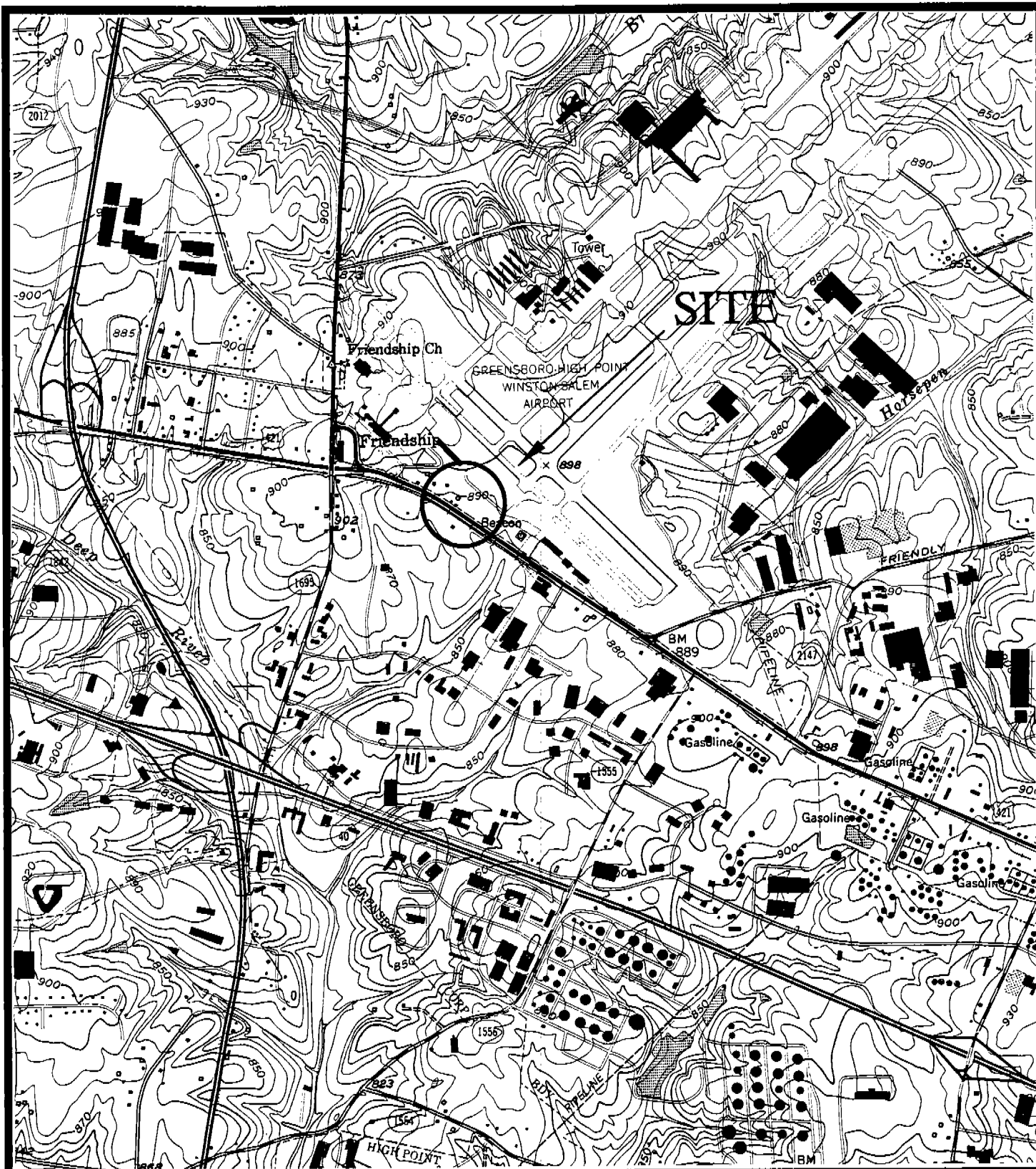
*Piedmont Triad Airport Authority/Cargo Building #1
ECS Project G-1860
January 9, 1998*

IV. CONCLUSIONS AND RECOMMENDATIONS

Based on laboratory analysis, no volatile or semi-volatile TPHs were detected in the confirmation samples collected. No further assessment of this UST is recommended at this time.

The activities and evaluative approaches used in this assessment are consistent with those normally employed in hydrogeological assessments and remediation projects of this type. Our evaluation of site conditions has been based on our understanding of the project information and the data obtained during our field activities.

FIGURES



SOURCE:
USGS TOPOGRAPHIC MAP
GUILFORD, NC QUADRANGLE
DATED 1951, REVISED 1994

SCALE: 1" = 2000'

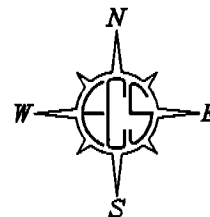
ECS LTD

ENGINEERING
CONSULTING
SERVICES, LTD

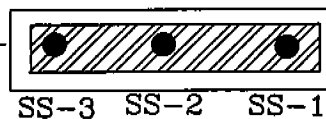
FIGURE 1
SITE LOCATION MAP
PIEDMONT TRIAD AIRPORT
AUTHORITY/CARGO BUILDING #1
GREENSBORO, NC

ECS PROJECT G-1860

CARGO
BUILDING
#1



EXCAVATION
LIMIT



AIRLINE ROAD

NC HWY 421

- FENCE LINE
- ▨ FORMER UST LOCATION
- APPROXIMATE SOIL SAMPLE LOCATION

REFERENCE:
FIELD NOTES BY ECS PERSONNEL

NOT TO SCALE

ECS_{LTD}
ENGINEERING
CONSULTING
SERVICES, LTD

SITE PLAN
PIEDMONT TRIAD
AIRPORT AUTHORITY
GREENSBORO, NORTH CAROLINA

DRAWN BY/DATE SVW/12-22-97 CHECKED BY/DATE SGT/1/2/98 PROJECT NO. G-1860 FIGURE NO. 2

APPENDIX

FOR
TANKS
IN
NC

Return Completed Form To:
The appropriate DEM Regional Office according to the county of the facility's location. [SEE REVERSE SIDE OF OWNER'S COPY (PINK) FOR REGIONAL OFFICE ADDRESS].

State Use Only

I. D. Number _____

Date Received _____

INSTRUCTIONS

Complete and return five (5) working days prior to closure or change-in-service.

I. OWNERSHIP OF TANK(S)

II. LOCATION OF TANK(S)

Tank Owner Name: Piedmont Triad Airport Authority
(Corporation, Individual, Public Agency, or Other Entity)Street Address: 6415 Airport Pkwy, Ste 1County: GuilfordCity: Greensboro State: NC Zip Code: 27409Tele. No. (Area Code): 910-665-5600Facility Name or Company: Piedmont Triad Airport Auth.

Facility ID # (if available): _____

Street Address or State Road: Hwy 421 near Airline Rd.County: Guilford City: Greensboro Zip Code: 27409

Tele. No. (Area Code): _____

III. CONTACT PERSON

Name: Bill Shaw Job Title: _____ Telephone Number: 910 665-5600

IV. TANK REMOVAL, CLOSURE IN-PLACE, CHANGE-IN-SERVICE

- Contact Local Fire Marshall.
- Plan the entire closure event.
- Conduct Site Soil Assessments.
- If Removing Tanks or Closing in Place refer to API Publications 2015 "Cleaning Petroleum Storage Tanks" & 1604 "Removal & Disposal of Used

- Underground Petroleum Storage Tanks".
- Provide a sketch locating piping, tanks and soil sampling locations.
- Fill out form GW/UST-2 "Site Investigation Report for Permanent Closure" and return within 30 days following the site investigation.

- The site assessment portion of the tank closure must be conducted under the supervision of a Professional Engineer or Licensed Geologist. After January 1, 1994, all closure site assessment reports must be signed and sealed by a P.E. or L.G.
- Keep closure records for 3 years.

V. WORK TO BE PERFORMED BY:

Contractor Name: Environmental Management Solutions, Inc.Address: 302-A Pomona Dr, Greensboro State: NC Zip Code: 27407Contact: Jon Ransom Phone: 910-632-8800Primary Consultant: Sania Werner, ECS, Ltd. Phone: 910-856-7150

VI. TANK(S) SCHEDULED FOR CLOSURE OR CHANGE-IN-SERVICE

TANK ID#	TANK CAPACITY	LAST CONTENTS	PROPOSED ACTIVITY		
			CLOSURE		CHANGE-IN-SERVICE
			Removal	Abandonment In Place	New Contents Stored
1	3,000	Unknown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	

VII. OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE

Print name and official title

Sania V. Werner, Project Geologist

*Scheduled Removal Date: 11/14/97Signature: Sania V. WernerDate Submitted: 11/18/97

If scheduled work date changes, notify your appropriate DEM Regional Office 48 hours prior to originally scheduled date.

FOR
TANKS
IN
NC

Return Completed Form To:

The appropriate DEM Regional Office according to the county of the facility's location.
[SEE MAP ON REVERSE SIDE OF OWNER'S COPY (PINK) FOR REGIONAL
OFFICE ADDRESS].

State Use Only

I.D. Number _____

Date Received _____

INSTRUCTIONS

Complete and return within (30) days following completion of site investigation.

I. Ownership of Tank(s)

Owner Name: Piedmont Triad Airport Authority
(Corporation, Individual, Public Agency, or Other Entity)
Street Address: 6415 Airport Pkwy, Suite 1
County: Guilford
City: Greensboro State: NC Zip Code: 27409
Telephone Number: (336) 665-5600
(Area Code)

II. Location of Tank(s)

Facility Name: PTAA/ Cargo Building #1
(or Company)
Facility ID # (if available): _____
Street Address: Hwy 421 near Airline Road
(or State Road)
County: Guilford City: Greensboro Zip Code: 27409
Telephone Number: (_____) _____
(Area Code)

III. Contact Person

Name: Bill Shaw Job Title: _____ Tel. No. 336-665-5600
Closure Contractor: Environmental Management Solutions, Inc. Address: 302-A Pomona Dr., Greensboro 27407 Tel. No.: 336-632-8800
Primary Consultant: ECS, Ltd Address: 5-C Dundas Cir., Greensboro, NC 27407 Tel. No.: 335-856-7150
Lab: Paradigm Analytical Labs Address: 2627 Northchase Pkwy, Wilmington, NC Tel. No.: 910-350-1903

IV. U.S.T. Information

V. Excavation Condition

VI. Additional Information Required

Tank No.	Size in Gallons	Tank Dimensions	Last Contents	Water in Excavation		Free Product		Notable Odor or Visible Soil Contamination	
				Yes	No	Yes	No	Yes	No
1	5,000	5 ft x 30 ft	Gasoline/Diesel		x		x		x

See reverse side of pink copy (owner's copy) for additional information required by N.C. - DEM in the written report and sketch.

NOTE: The site assessment portion of the tank closure must be conducted under the supervision of a Professional Engineer or Licensed Geologist. After Jan.1, 1994, all closure site assessment reports must be signed and sealed by a P.E. or L.G.

VII. Check List (Check the activities completed)

PERMANENT CLOSURE (For Removing or Abandoning-in-place)

- ☒ Contact local fire marshal.
- ☒ Notify DEM Regional Office before abandonment.
- ☒ Drain & flush piping into tank.
- ☒ Remove all product and residuals from tank.
- ☒ Excavate down to tank.
- ☒ Clean and inspect tank.
- ☒ Remove drop tube, fill pipe, gauge pipe, vapor recovery tank connections, submersible pumps and other tank fixtures.
- ☐ Cap or plug all lines except the vent and fill lines.
- ☒ Purge tank of all product & flammable vapors.
- ☒ Cut one or more large holes in the tanks.
- ☒ Backfill the area.
- Date Tank(s) Permanently closed: 11/19/97
- Date of Change-in-Service: _____

ABANDONMENT IN PLACE

- ☐ Fill tank until material overflows tank opening.
- ☐ Plug or cap all openings.
- ☐ Disconnect and cap or remove vent line.
- ☐ Solid inert material used - specify: _____

REMOVAL

- ☒ Create vent hole.
- ☒ Label tank.
- ☒ Dispose of tank in approved manner.
- Final tank destination: _____
- Safeway Tank Disposal

VIII. Certification (Read and Sign)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Print name and official title of owner or owner's authorized representative

Sania V. Werner, Project Geologist

Signature

Sania V. Werner

Date Signed

11/9/98

No 3761

97-150810

MANIFEST

Date: 11/18/97

Phone No.:

EPA ID No.:

Generator: Triad Histogram Authority / ECS.

SC Dundas Cir.

Greensboro N.C. 27407

I certify that the materials described below are properly described, classified, packaged, marked & labeled, and are in the proper condition to be transported as specified by the Department of Transportation. I certify that the waste described below is non hazardous in accordance with the Environmental Protection Agency. I certify that the specific waste was delivered to the carrier named below for transport to the facility indicated.

Date 11/18/91

Signature

Shan - water (ECS representing PTAA)

PROPER SHIPPING NAME AS LISTED ON 172.101 TABLE	HAZ CLASS	DOT I.D. NUMBER	PG GROUP	QUANTITY	CIRCLE UNIT	CONTAINER NO. TYPE	ERG. NO.
WATER (Ignitable Material) Oil / Water	N/A	N/A	I II III	1585	Gals. Pounds Tons Cu. Yds.	TT DT CM DM DF	

DESCRIPTION OF MATERIAL		CIRCLE FORM	AMOUNT SOLIDS		AMOUNT LIQUIDS	
		SOLID LIQUID SLUDGE	GALLONS	TONS	NO. DRUMS	GALLONS
CONTAINER	NUMBER					
			FACILITY USE ONLY			

Transporter:

Shamrock Environmental

6/06 Coate Park Ln

Rison Summit A.C. 27214

Vehicle License Tag Number(s) L 1-E867

Unit Number(s)

11-3 1-3

Phone No.: (202) 375-1787

EPA ID No.: 1002020-4-44

Container: 7 Anlies

24 Hour Emergency No.: 200-881-1098

Transporter Certification:

_____ certify that the specified material was transferred in a registered (licensed) vehicle to the facility named and was accepted.

Pick-up Driver's Signature Philip M. Smith

Date 11/18/97

Delivery Driver's Signature Phillip Matthews

Date 11/16/19

Facility: SHAMROCK ENVIRONMENTAL CORPORATION

Phone No.: (910) 375-1989

6106 CORPORATE PARK DRIVE

Contact:

BROWNS SUMMIT, NC 27214

Handling Method: Fuels Recovery Program

Facility Certification:

I certify that the transporter above delivered the specified material to this facility and was handled in the above listed handling method.

Date: 11-18-51

Signature: E. J. Harriman

PARADIGM ANALYTICAL LABORATORIES, INC.

2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Ms. Sania Werner
ECS, LTD.
5-C Dundas Circle
Greensboro, NC 27407

Date 11-21-97

Report Number: G161-178

Client Project ID : Piedmont Airport Cargo Bldg.; G-1860

Dear Ms. Werner:

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories



Laboratory Director
Mark Randall

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Total Petroleum
Hydrocarbons
by GC

Client Sample ID: SS-1
Client Project ID: Piedmont Airport Cargo Bldg.
Lab Sample ID: 32820
Lab Project ID: G161-178
Matrix: Soil

Date Collected: 11/19/97
Date Received: 11/20/97
Analyzed By: JPW
%Solids: 71.7

Compound	Result (MG/KG)	Quantitation Limit	Method	Dilution Factor	Date Analyzed
Gasoline	BQL	8.7	5030	1.0	11/20/97
Diesel#2	BQL	39	3550	1.0	11/20/97

Comments:

Quantitation Limits are fully calculated using dilution factors and % solids.
BQL = Undetected or below quantitation limit.

Reviewed By: JPW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Total Petroleum
Hydrocarbons
by GC

Client Sample ID: SS-2
Client Project ID: Piedmont Airport Cargo Bldg.
Lab Sample ID: 32821
Lab Project ID: G161-178
Matrix: Soil

Date Collected: 11/19/97
Date Received: 11/20/97
Analyzed By: JPW
%Solids: 77.7

Compound	Result (MG/KG)	Quantitation Limit	Method	Dilution Factor	Date Analyzed
Gasoline	BQL	8.0	5030	1.0	11/20/97
Diesel#2	BQL	36	3550	1.0	11/20/97

Comments:

Quantitation Limits are fully calculated using dilution factors and % solids.
BQL = Undetected or below quantitation limit.

Reviewed By: JPW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Total Petroleum
Hydrocarbons
by GC

Client Sample ID: SS-3
Client Project ID: Piedmont Airport Cargo Bldg.
Lab Sample ID: 32822
Lab Project ID: G161-178
Matrix: Soil

Date Collected: 11/19/97
Date Received: 11/20/97
Analyzed By: JPW
%Solids: 77.6

Compound	Result (MG/KG)	Quantitation Limit	Method	Dilution Factor	Date Analyzed
Gasoline	BQL	8.0	5030	1.0	11/20/97
Diesel#2	BQL	36	3550	1.0	11/20/97

Comments:

Quantitation Limits are fully calculated using dilution factors and % solids.
BQL = Undetected or below quantitation limit.

Reviewed By: ENP

Client: ECS

Project ID: Airport Cargo Bldg

Date: 11/19/97

Report To: Saig Werner

Address: 5-C And 75 C.T.

P.O. Number:

Turnaround:

24 HR

Address: Greensboro, N.C.

Contact: Sand Werner

Job Number:

G-1860

Quote #:

27407

0511-958 (01b)

Invoice To: Same

[illegible]

ORIGINAL